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ABSTRACT

This paper reviews research about writing that may inform teachers' observations of their students and their decisions about how best to support students' efforts. First, since ways of using written language vary with different social situations, the paper reviews research on how literacy functions in varied communities, including both the classroom and the larger community the student inhabits outside the classroom. Second, since writing is a complex process, one involving the orchestration of many kinds of skills, the paper reviews research on the composing process, with the intent of supporting teachers' efforts to observe individual writers' ways of composing, including their successes and challenges, and thus help writers overcome difficulties that cannot be seen on the page, ward off problems before they occur in print, and ease students' ways into writing. Third, since writing is a developmental process, one in which today's ways of composing change in complex ways into tomorrow's, the paper reviews research on the development of writing, on the assumption that such knowledge may help teachers appreciate the signs of progress that may be hidden amidst students' sighs and scratch-outs, and see the kinds of support individual students might find most helpful. One figure is included, and 19 pages of references are attached. (SR)

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ON TEACHING WRITING: A REVIEW OF THE LITERATURE

Anne Haas Dyson
Saran Warshauer Freedman

July, 1990

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ON TEACHING WRITING:
A REVIEW OF THE LITERATURE

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> Five-year-old Sharon had been standing a few feet from the classroom writing center, observing her friends at work. Anxious to involve Sharon in the writing, the adult observer inquired, "You gonna' write today too, Sharon?"
>
> "Well," said Sharon, "how do you do it?" (Dyson, 1981, p. 776)

While few children are as straightforward as Sharon, most student writers, including adults, expect their teachers to help them answer the "How-do-you-do-it?" question. And, despite the deceptively simple nature of the question, providing supportive answers is a complex challenge.

Some of the complexity of teaching writing comes from the nature of writing itself. As we illustrate in this chapter, writing can be an avenue for individual expression and, at the same time, it can serve to reflect or proclaim the individual author's membership in a social group. Further, writing is conceived of as a skill and yet, at the same time, that skill is itself a process dependent upon a range of other skills and, moreover, a process that is kaleidoscopic, shaped by the author's changing purposes for writing.

Some of the complexity of teaching writing comes from the nature of classrooms as educational settings. Teachers negotiate between the class as a social group and individual students in that group, a challenging task when individuals number in the twenties and thirties or more and when social/cultural membership is diverse. Moreover, teachers often negotiate between their desires to teach writing as a purposeful process and to teach the varied "skills" conceived of as integral to that process, skills differentially controlled by their students.

To manage this complex teaching act, teachers of all levels must become comfortable with and careful observers of writers and of writing, seeking the sort of information about students that helps them as teachers respond to the questions—the challenges—inherent in their students' efforts. In the following three sections of this chapter, we review the kinds of interrelated research knowledge about writing that may inform teachers' observations of their students and their decisions about how best to support their students' efforts.

First, since ways of using written language vary with different social situations, we review research on how literacy functions in varied communities, including both the classroom and the larger community the student inhabits outside the classroom. This research may support teachers' efforts to build on the foundation of each student's literacy experiences.

Second, since writing is a complex process, one involving the orchestration of many kinds of skills, we review research on the composing process. Such knowledge may support teachers' efforts to observe individual writers' ways of composing, including their successes and challenges. On the basis of such observations, teachers may help writers overcome difficulties that cannot be seen on the page, ward off problems before they occur in print, and thus, ease students' ways into writing.

Finally, since writing is a developmental process, one in which today's ways of composing change in complex ways into tomorrow's, we review research on the development of writing. Such knowledge may help teachers appreciate the signs of progress that may be hidden amidst students' sighs and scratch-outs. Too, such knowledge may support teachers' efforts to understand the questions students cannot articulate and to appreciate the answers they figure out for themselves. Further, knowledge about developmental processes may guide teachers to see the kinds of support individual students might find most helpful.

The research we review can provide information for teachers, but it cannot provide prescriptions to follow, techniques proven to work for all learners. Rather, it can offer information that might help focus teacher observations, deepen insights, and, in the end, inform the crucial decision-making that is the daily work of all teachers—when to push a student for more, when to praise what may seem to be "errors," when to encourage students to write collaboratively, when to call a parent in.

As suggested by our review, this decision-making is informed by observations of both the classroom community and individual class members. Each student has a unique rhythm, a particular pitch, but that individual quality is a part of, and is shaped by, the rhythm and pitch—the communal quality—of the classroom as a whole. Just as musical notes play differently in varied compositions, so do our students reveal themselves differently in different combinations of others. We, then, aim through this review to contribute to educators' understanding of writing's compositional possibilities, of the promise and challenges of each student, and of their own potentials, in collaboration with their students, to further literacy growth in their classrooms.

THE USES OF WRITING

Five-year-old Sharon's "how-do-you-do-it" question is difficult to answer, in part, because the hows are shaped by the whys, whos, and whats: Who wants to write, to or for whom, about what, and why? Indeed, in the lives of children, as in the lives of whole communities, literacy prospers if and when compelling reasons exist for writing and when the information conveyed through that writing is a valued part of the social network—when it helps people mediate relationships with other people and reflect on their own lives (Heath, 1986; Schieffelin & Cochran-Smith, 1984).

In fact, children like Sharon are first introduced to literacy within their homes and communities and within the social and emotional context of relationships. For example, in their families, list-making may be at the center of family planning for a shopping trip, an illegible phone message or returned check may be surrounded by a family argument, a note from a teacher may elicit parental confusion, pride, or anger, while an "I love you" note from a child might evoke an oral response and a hug. Children first learn of print's social significance within the context of familial occasions, where things happen around and through particular kinds of print (Gundlach, McLane, Scott, & McNamee, 1985; Heath, 1983; Taylor, 1983; Tizard & Hughes, 1984). Writing, then, like speech, is a cultural tool, one that members of a society use to carry on their lives together and that they pass on to their children (Scribner & Cole, 1981).

Variation in Writing's Functions and Forms

The tool of writing is viewed by many scholars as contributing to human cultures in unique ways (Goody, 1968; Goody & Watt, 1963; Olson, 1977; Ong, 1982). For example, Goody argues:

> The importance of writing lies in its creating a new medium of communication between [people]. Its essential service is to objectify speech, to provide language with a material correlative, a set of visible signs. In this material form, speech can be transmitted over space and preserved over time; what people say and think can be rescued from the transitoriness of oral communication. (1968, pp. 1-2)

In the last decade anthropologists, linguists, and psychologists have tried to specify writing's varied functions and forms—its usefulness—in a range of situations. Some scholars have worked to characterize the features of written language that make it such a potentially powerful medium of communication in particular situations. In this work, written language is contrasted with oral language. Written language, researchers and theorists argue, can be constructed so that it is ultimately less dependent upon a specific context. Authors can pack much meaning onto the printed page, weaving words together tightly through such linguistic features as subordinate clauses, prepositional phrases, and adjective phrases (Chafe, 1982, 1985; Johnston, 1979; Tannen, 1982, 1984a, 1984b).

By tightly structuring words, meanings are made explicit—that is, the connections between ideas and the qualifications of those ideas are deliberately put into words. "On the other hand," "however," "despite this" are the sorts of phrases we expect in written essays. Other scholars argue that the development of writing had intellectual consequences in the history of humankind, leading to the development of abstract, logical reasoning (Goody & Watt, 1963; Olson, 1977).

Yet, this vision of writing as explicit—as able to exist on its own, meaningful for anyone in any situation—contrasts sharply with the sorts of cozy home literacy scenes just discussed. Clearly there are varied styles of written language, just as there are varied styles of oral language (Chafe & Danielewicz, 1987). For this reason, the theory that the development of writing skill leads inevitably to the production of expository prose has been challenged. Ways of using both oral and written language are interrelated not only with contexts for using language but also with ways of living—historical and geographical conditions; social and economic resources and opportunities; religious beliefs, values, and motivations (Cole & Nicolopoulous, in press; Gee, 1988; Heath, 1983; Philips, 1975; Scribner & Cole, 1981). In this sense, written language is always "embedded"—it always figures into particular kinds of communicative events. Its form varies depending upon its uses.

Many scholars have investigated how writing varies from situation to situation. For example, the study of literature and rhetoric has produced taxonomies of textual types (e.g., Kinneavy, 1971; Lundsford & Ede, 1984; Winterowd, 1975). And authors concerned with the teaching of writing have produced other categories (Britton, Burgess, Martin, McLeod, & Rosen, 1975; Emig, 1971). They distinguish kinds of writing according to the purpose for writing (e.g., to persuade or to inform) and the features associated with those purposes.

Others have investigated how writing varies across situations, considering how the activity of writing is socially organized within the ongoing life of particular groups (Basso, 1974; Philips, 1975; Szwed, 1981). Researchers working within this tradition are called "ethnographers of communication" (Gumperz & Hymes, 1972; Hymes, 1962). They study social activities that are centered around reading or writing, activities often termed "literacy events" (Heath, 1982; Teale, Estrada, & Anderson, 1981). Like "speech events" (Hymes, 1972), literacy events are characterized by varied components, including setting, participants (senders, recipients), purposes and goals, message form, content, channel, key or tone, and rules governing the sort of writing and talking that should occur (Basso,

1974). For example, informal letter-writing events differ from joint committee-report-writing events, which differ from list-making events.

Both the social and the cognitive consequences of written language, then, depend upon the specific nature of the written language events, including the goals and the cognitive processes those events entail. In other words, it is not writing per se but the sorts of social situations in which writing is embedded that determine its ultimate human effects. For example, writing to memorize texts may influence individuals' rote memory, but such literacy practice would not affect performance on a logical reasoning task (Scribner & Cole, 1981). From a social point of view, a person who finds writing a letter to a relative a comfortable use of literacy may not be comfortable writing an academic essay—such impersonal writing for an unknown audience may be contrary to that individual's sense of self in relationship to other people (Scollon & Scollon, 1981).

The most extensive study of how literacy is used in a contemporary American community has been done by Heath (1983). She studied language use in two working class communities and in the homes of middle-class teachers in the Piedmont Carolinas. Individuals in all three settings were literate, in that all made some use of written language, but only the middle-class community used written language—and talked about written language—in ways compatible with the literacy models used in school. For example, people in all communities made lists and wrote notes, but only those in the middle-class neighborhood would bring home expository sorts of writing tasks, such as writing summaries or reports.

Heath worked with teachers to develop strategies for making school ways of using and talking about written language sensible to students from working-class as well as middle-class communities. For example, a primary grade teacher incorporated environmental print (e.g., labels on cans and boxes, street signs, store advertisements and price tags) into her classroom. Heath (1980) describes the philosophy of this teacher:

> Reading and writing are things you do all the time—at home, on the bus, riding your bike, at the barber shop. You can read, and you do everyday before you ever come to school. You can also play baseball and football at home, at the park, wherever you want to, but when you come to school or go to a summer program at the Neighborhood Center, you get help on techniques, the gloves to buy, the way to throw, and the way to slide. School does that for reading and writing. We all read and write a lot of the time, lots of places. School isn't much different except that here we work on techniques, and we practice a lot—under a coach. I'm the coach. (pp. 130-131)

An intermediate grade teacher helped her students become ethnographers, who talked, read, and wrote of the folk concepts about agriculture in their local community and the relationship of those concepts to "scientific" concepts. A high school teacher encouraged students to create documents and videos explaining to senior citizen groups the meanings of complex written forms, like housing regulations and warranties. At all levels, students discussed differences in how people used oral and written language, thereby developing their comfort with the talk about oral and written language so prevalent in schools as well as developing their capacity to manipulate language deliberately to suit different social occasions.

Although studies of literacy in varied cultural groups are helpful, sensitizing us to the rich diversity of literacy use in our society, clearly not all teachers can do extensive studies in the homes of students. But teachers can provide curricular time and space for

students to talk about their out-of-school lives, providing teachers with insight into possible ways of building bridges, making connections (Hymes & Cazden, 1980).

Too, the variability of writing's forms and functions suggests that the formal school curriculum recognize variable functions and forms (Florio & Clark, 1982). Defining writing more broadly might allow more students to see themselves officially as writers and would allow teachers more footholds from which to build—more ways of tapping students' interest in print. (For an illustration of such a rich literacy curriculum, see Edelsky & Smith's [1984] description of a sixth-grade curriculum that recognized a variety of writing purposes and forms, including signs, lists, and more extended discourse forms, in a variety of content areas.)

Literacy in the Classroom Community

A "literacy community" is not synonymous with a "cultural community" (Teale, Estrada, & Anderson, 1981). Just as speech communities (Gumperz, 1971) may be occupational or interest specific, so may literacy communities. The classroom itself can be considered a literacy community, one with special ways of using and talking about written language. Thus, the classroom can create or restrict the sorts of opportunities students have to become literate. In this section, we look closely at the nature of the classroom as a context for writing.

In trying to understand how literacy functions in the classroom community, a basic question is, what is the nature of the literacy activities that occur there? This kind of question can allow teachers insight into the sorts of bridges they are building for children, both from the literacy uses in the home to the classroom and from the classroom to the workplace (Gundlach, Farr, & Cook-Gumperz, 1989). In addition, it can allow teachers to evaluate the ways in which literacy becomes meaningful inside classrooms.

For example, Applebee (1981), at the secondary school level, and Florio and Clark (1982; Clark & Florio, 1981; Clark et al., 1981), at the elementary school level, have documented how many school writing opportunities restrict children from intellectually and socially engaging in the writing process. For example, writing's format and much of its content might be provided by a commercial publisher on a worksheet or by the teacher, as in board-work; in such cases, students do not have to formulate their own thoughts. As Hudson (1988) illustrates, the more students control the form and content of their writing, the more likely they may be to perceive even assigned writing as their own.

Other researchers have focused on unofficial (child-controlled) writing, the kind that may exist in the "underground writing curriculum" (Dyson, 1985c). These researchers are primarily interested in how students create their own opportunities to learn. For example, Fiering (1981) and Gilmore (1983) studied the unofficial writing activities of intermediate-grade students in inner-city schools, noting that students who may be viewed as poor writers by their teachers may in fact make extensive use of writing for their own purposes. Asher (1988) provides similar findings for inner-city high school students.

In order to look in more fine-grained ways at classroom writing events—to begin to understand exactly how teachers and students interactively create them—we must step back and consider how teachers and students interactively create schooling itself. The concept of the classroom as a social system jointly constructed by teachers and students has been dramatized by studies that began in the 1950s (Henry, 1955, 1963; Jackson, 1968; Leacock, 1969; Rist, 1970, 1973; see reviews by Bogdan & Biklen, 1982, and Hamilton, 1983).

In the 1970s, researchers began to focus specifically on the language of the classroom, arguing that it was, after all, through language that teaching and learning occurred and, thus, through language that insight could be gained into the social context of learning (see review, Cazden, 1986; also Cazden, 1988). This research, much of which has been conducted in elementary classrooms, has revealed the varied demands made by classroom activities. It is not enough for students to know in an academic sense—they must know how to display what they know through appropriate talk (e.g., Bremme & Erickson, 1977; Green & Wallat, 1979; Mehan, 1979; Merritt, 1982; Shultz & Florio, 1979; Wilkinson, 1982). That is, they must be familiar and comfortable with the kinds of questions that teachers ask, with the ways people take turns speaking, or with the sorts of relationships expected among the children themselves (relationships that are often competitive rather than cooperative).

In the schools, writing is taught as teachers and students talk about writing. Thus, the literature on classroom language can inform teachers' efforts to take advantage of the rich interactional potential of the classroom. For example, some kinds of relationships between teachers and students may be particularly productive for written language growth. Britton (1989) argues for the importance of collaborative relationships between teachers and students, in which teachers do not relinquish their authority but do allow children choices in their daily activities. Wells (1986) discusses the instructional implications of his study of parent/child interaction during first language acquisition; he stresses the importance of teachers, like parents, responding to students' written initiatives, helping them develop their ideas, an emphasis compatible with the recent pedagogical emphasis on dialogue journals (Staton, Shuy, Peyton, & Reed, 1988) and on teacher-student writing conferences (e.g., Applebee, 1984; Calkins, 1983, 1986; Graves, 1983; Freedman, 1987a) to be discussed in a later section.

Despite teachers' best intentions for planning productive writing activities, students may not interpret those writing opportunities as teachers have planned them. The writing opportunities seemingly available to students from a teacher's or an observer's point of view may not, in fact, be realized in students' interpretations of those events. Students may differ in their social interpretations of the events (e.g., who, in fact, the audience is, what the actual purpose of the event is, what the evaluative standards are) (Clark & Florio, 1981; Dyson, 1985b; Freedman, 1987a; Sperling & Freedman, 1987). They may also have differing conceptions about writing and written language than those underlying an activity planned by the teacher. For example, they may not assume the analytic approach to language that underlies and is taken for granted by many beginning literacy programs (Dyson, 1984a, 1984b). They may have differing notions of how narratives are structured or even what stories are (Heath, 1983; Michaels & Cook-Gumperz, 1979; Cazden, 1988).

One particularly potent source of tension between teachers and students is the relationship among students themselves that is expected in the classroom. The peer social network interacts in complex ways with teaching and learning, at times supporting and, at other times, interfering. For example, peers have been found to be effective teachers and collaborative learners (Cooper, Marquis, & Ayers-Lopez, 1982; Gere, 1987; Newman, Griffin, & Cole, 1984; Steinberg & Cazden, 1979; Wilkinson, 1982). On the other hand, if peer group values conflict with classroom values, children may reject academic demands; among those aspects of school life most often cited as divisive are those that touch on children's relationships with each other—children having to work silently, to value adult more than self and peer approval, to compete with friends for that adult approval (Gilbert & Gay, 1985; Gilmore, 1983; Labov, 1982; Philips, 1972; Tharp et al., 1984). In writing classrooms in particular, students having to evaluate each other's work can generate tension (Freedman, 1987b).

Nonetheless, students' desires for each others' companionship and approval can be exploited. Through informal talk during writing, children may learn how it is that writing figures into human relationships, as peers respond both critically and playfully to their efforts (Daiute, 1989; Dyson, 1987b, 1988a). Through more structured peer conferences, modeled after teacher/student conferences, students may be guided to attend to each other's writing in particular ways (Bruce, 1987; Gere, 1987; Graves, 1983; Nystrand, 1986; Sowers, 1985). Students can also use written language to establish relationships with students in other grade levels, other schools, cities, or states, or even other countries (e.g., Freedman & McLeod, 1988; Greene, 1985; Heath & Branscombe, 1985), relationships that can provide them with engaging but potentially demanding audiences.

No doubt we have much to learn about how particular kinds of relationships between teachers and students and among students themselves—and the sorts of talk that enact those relationships—influence students' learning in our very diverse society. For example, many pedagogical strategies for writing stress teacher questioning of students; that questioning is meant to help students expand and develop their ideas. And yet, much research has documented how uncomfortable some students may be in situations where adults repeatedly question them about their work; this discomfort has been particularly noted in children who are not of the same ethnic or social class as their teacher (Labov, 1970; Tizard & Hughes, 1984). As we explore the characteristics of varied classrooms serving students from varied backgrounds, we may be able to articulate better the sorts of experiences that are critical for writing growth (e.g., opportunity to talk about and reflect upon writing in particular ways) from the particular shapes that critical experience can take and the variety of ways such opportunities can be provided.

The Evaluation of Written Language

In the classroom community, Sharon's "How-do-you-do-it?" question may soon be overshadowed by her teacher's inquiry, "How well can *you* do it?" For a major educational issue is determining how well the writing of individual students, whole classes, whole school districts, indeed whole countries is progressing. How can student progress be measured? How can successful instruction be identified? And, an even more basic question, what is "good" writing? As will be discussed in the section on writing development, there is no one description of what writing progress throughout the school years looks like. Still, there are ways to document progress, ways which we will discuss here.

Inside classrooms. The most common classroom practices for evaluating student writing have proven problematic: writing comments on student papers and, particularly for intermediate and secondary school students, grading (Searle & Dillon, 1980). Comments on mechanics (spelling, handwriting, grammar) may overshadow any comment on students' ideas (Petty & Finn, 1981). Too, when papers are graded, comments may serve primarily to justify the grade, rather than to help students learn; further, written comments tend to be phrased so generally that they carry little meaning (Butler, 1980; Hahn, 1981; Sommers, 1982; Sperling & Freedman, 1987). And, when every piece of writing is commented upon by the teacher, students have little opportunity to practice evaluating their own progress, an activity critical to student growth (Graves, 1983; Hilgers, 1986; Hillocks, 1986; Wolf, 1988). To become reflective writers, students must take communication, not grades, as their end goal (Applebee, 1984; Britton et al., 1975; Freedman, 1987a).

An alternative to comments and grades, one applicable across all levels of schooling, is informal assessment based on teacher observation and careful record keeping (e.g., anecdotal records, folders of students' work samples). Through such techniques,

student progress is revealed by patterns in behaviors over time (British National Writing Project, 1987; Dixon & Stratta, 1986; Genishi & Dyson, 1984; Graves, 1983; Jaggar & Smith-Burke, 1985; Newkirk & Atwell, 1988). These patterns are not likely to display smooth forward motion, but, rather, will be characterized by ups and downs; some kinds of writing activities pose more difficulties than others, and, too, students themselves sometimes take on more challenges when they write for particular occasions than they do at other times (Flower, 1988; Lucas, 1988a, 1988b; Ruth & Murphy, 1988).

As teachers move toward keeping folders of their students' writing, perhaps giving a grade to the entire folder or to selected pieces, they may involve students in the evaluation process. Teachers can ask students to discuss their ways of writing and their products, articulating changes in processes and products over time and across kinds of writing activities; students are thus helped to formulate concepts about "good" writing, including the variability of "good" writing across situations and audiences (Gere & Stevens, 1985; Knoblauch & Brannon, 1984). As part of their folder evaluation, students can select for evaluation pieces they feel most proud of or committed to and explain specifically why they value those pieces better than others (Burnham, 1986; Graves, 1983).

In schools, districts, and states. Outside the classroom, writing evaluation plays a major role in the educational decision-making of the school, the school district, and the state. For example, writing programs within a school or a district must be evaluated, and students must be assessed for placement in courses or schools or even for promotion and certification. Too, through an evaluation procedure, teachers may be brought together to develop community standards for "good" writing.

In the last decade, the most popular large-scale assessments of writing have been modeled after the evaluations developed and commonly used by the Educational Testing Service (Davis, Scriven, & Thomas, 1987; Diederich, 1974; Myers, 1980; White, 1985). In these evaluation procedures, students write on an assigned topic, in a relatively short time, and in a testing situation. Teachers are then brought together to rate the papers, giving a single score to each paper. The teachers discuss their rating standards, and more than one teacher rates each paper, to be certain that raters agree. When the goal is to make judgments about individuals, evaluators advise that more than one writing sample be gathered from each writer.

These "holistic" evaluation procedures are a major advance over older methods of judging writing that were based on multiple-choice grammar tests, and they are also very useful for helping communities of teachers develop standards together. Yet, there are serious problems with holistic assessments (Brown, 1986; Lucas, 1988a, 1988b; Witte, Cherry, Meyer, & Trachsel, in press). Writing for a test has little function for the student writers other than for them to be evaluated. Too, students must write on topics they have not selected and may not be interested in. Further, in such settings, students are not given sufficient time to engage in the elaborated processes that, as will soon be discussed, are fundamental to how good writers write.

The current alternative is similar to the kind of in-classroom folder evaluation just discussed. Termed "portfolio assessment," this procedure, which is common in England, is now in experimental stages at several sites in the United States. For this kind of assessment, students submit a folder of their work, created as part of their normal instructional activity, to be evaluated in a formal evaluation setting (Camp, 1985; Camp & Belanoff, 1987; Elbow, 1986; Elbow & Belanoff, 1986). This alternative, although less controlled and standardized than holistic assessment, may provide an accurate picture of individual writers and writing programs. And, as teachers work together to analyze portfolios, they may develop analytic tools that could prove useful in their teaching.

Official evaluations in schools, districts, and states often influence the nature of instruction in writing (Cooper, 1981; Cooper & Odell, 1977; Diederich, 1974; Mellon, 1975; Myers, 1980), and so the more harmonious the assessment is with what successful practitioners do, the more valuable the assessment for the classroom.

In the nation. In the United States there are two ongoing national assessments: the writing portion of the National Assessment of Educational Progress (NAEP), for 9-, 13-, and 17-year-olds (Applebee, Langer, & Mullis, 1986a, 1986b; Lloyd-Jones, 1977) and the College Entrance Examination Board's Achievement Test in English Composition given to a select population of high school seniors. In addition, in the early 1980s, the International Writing Assessment collected writing samples in 14 countries from students in elementary school, at the end of compulsory secondary education, and at the end of academic secondary education (Gorman, Purves, & Degenhart, 1988; Gubb, Gorman, & Price, 1987; Purves, 1988).

These national writing assessments all evaluate relatively short samples of writing collected under formal testing conditions. Thus, the samples present the same validity problems as the impromptu writing scored for school, district, and state assessments. Only NAEP has published claims about the state of writing in our nation, and these claims must be interpreted with great caution, given that their conclusions are based on students' performance on impromptu writing completed in 15 minutes (Mellon, 1975; Nold, 1981; Silberman, in press).

There is reason, then, for educators to consider seriously a potentially more valid alternative, national portfolio assessments; such assessments have not yet been used for national evaluation purposes in the U.S., but they have been used in England (Dixon & Stratta, 1986; O'Hear, 1987).

The concerns discussed in this opening section of our review, on the uses of literacy, will be echoed in our succeeding two sections, on writing processes and writing development respectively. Even as we focus in to look at how individual students engage with writing—and how their engagement changes over time—we must bear in mind the purposes and situations that are couching their efforts, including the people among whom and for whom they are writing. As we have argued, the meaning of writing for individual students, like the meaning of individual notes, is best revealed in composition with others.

THE PROCESSES OF WRITING

Sharon's "how do you do it" question is central to research on writing processes, not just for five-year-olds but also for older writers, their teachers, and researchers. All involved want to know how writers write—what problems writers face, how they solve their problems, and what support they need along their journey from first idea to final version.

In the past two decades researchers shifted their attention from studies of pieces of writing, the written products, to studies of "how you do it," of writers' composing processes. They investigated what writers think about and the decisions they make—in essence how they manage the complex task of putting thoughts on paper. This shift from studying writing itself to studying how writers write has been accompanied by a similar shift in the orientation of many classroom teachers (Applebee, Langer, & Mullis, 1986a,b; Freedman, 1987a; Hairston, 1982). And yet, process approaches in actual classroom practice have not been universally successful (Applebee, 1981, 1984; Freedman, 1987; Hillocks, 1986; Langer & Applebee, 1987; Swanson-Owens, 1986). One difficulty is that there is no "writing process," but a flexible process, one influenced by the kind of writing

being attempted, the writer's purpose and the situational conditions—by, in other words, the complex dimensions of literacy events discussed in our first section. Thus, process research—like all research—does not offer any simple prescriptions for practice. But it can offer a vocabulary for talking about the nature of writing—planning, revising, editing—and insight into how these processes work for particular writers in particular situations.

Describing Writers at Work

Research on how writers write began with Emig's (1971) case studies of twelfth-graders. She pioneered the think-aloud protocol as a way of studying how writers compose. These protocols consist of what writers say they are thinking about while they are actually in the process of writing. Protocols, then, give researchers some access to the thinking processes of teenage and adult writers who do not naturally talk as they write. In addition to these think-aloud protocols, Emig used many sources of information to understand her students' writing, including extensive interviews with the students about their experiences with school writing and analysis of their written products.

Emig learned that the highly successful, middle-class, twelfth-grade students she studied found school-assigned writing generally unengaging; they spent little time planning what they would say and less time revising it. In essence, school writing was a well-learned, fairly routinized, mechanical activity; its purpose for these students was not to communicate to someone about something, nor was it to help them grapple with difficult new material. By contrast, the story and poetry writing these students did for themselves outside of school engaged their interest; on such writing, they spent substantial amounts of time composing, planning, and revising.

Since Emig, many researchers have studied students' writing processes. Some have used Emig's case study methods (Perl, 1979; Pianko, 1979; Stallard, 1979). Others have used protocols, but from a somewhat different research tradition, most notably, Flower & Hayes (1981a, 1981b, 1981c, 1983) from rhetoric and cognitive psychology. Others have observed writers' behaviors while they write, most notably examining when writers pause and when they write fluently (Matsuhashi, 1981; Chafe, 1982, 1985).

A Model of Adult Composing

While trying to understand how writers compose, some researchers have begun to generate a model or parts of a model of a prototypical expert adult's composing process (de Beaugrande, 1984; Bracewell, Fredericksen, & Fredericksen, 1982; Cooper & Matsuhashi, 1983; Hayes & Flower, 1980; Kintsch & van Dijk, 1978; Nold, 1981; Witte, 1985, 1987). This model construction has involved much research on the composing processes of adults, usually mainstream college students and sometimes high school students, and has suggested widely-accepted characteristics of the adult model.

First, writing is viewed as consisting of several main processes—planning, transcribing text, reviewing—that do not occur in any fixed order. Thought in writing is not linear but jumps from process to process in an organized way largely determined by the individual writer's goals. Britton et al. (1975) and Emig (1971) fully describe these processes, although their descriptions are more linear than those of more recent researchers. Flower & Hayes (1980b, 1981a), along with many other researchers (de Beaugrande, 1984; Bridwell, 1980; Daiute, 1981; Faigley & Witte, 1981; Matsuhashi, 1981; Perl, 1979; Sommers, 1980; Witte, 1983, 1985, 1987), define these processes recursively, showing how the subprocesses interrupt each other.

If the subprocesses of writing are recursive, any classroom structures that demand that all students plan, write, and revise on cue or in fixed order are likely to run into difficulty. Writers need flexibility, and they need time to allow the subprocesses to cycle back on each other.

A second characteristic of the adult model describes writing as a hierarchically organized, goal-directed, problem-solving process. Whatever one writes poses an intellectual problem to be solved on multiple levels, with some goals overarching others (Bereiter & Scardamalia, 1980, in press; Collins & Gentner, 1980; Hayes & Flower, 1980; Flower & Hayes, 1981b). For many kinds of school writing, writers try to achieve the more global goal of communicating an intended message to a reader by setting up that goal as the overriding problem to be solved. In order to solve that problem, the writer sets up subgoals and solves subproblems. For example, when writing an essay in school, the writer must solve the subproblems of how to form letters, how to punctuate and spell, how to construct felicitous written sentences, how to get ideas, how to order those ideas, and so on. Some of these processes become quite automatic and unconscious as the writer matures, while others take time, attention, and skill, even for experienced adults.

Thinking about writing as problem-solving can be helpful for teachers, guiding them to attend to the particular problems their student writers are grappling with. As will be further discussed in a later section, teachers' help is more likely to be effective if it is directed toward specific difficulties students are facing.

Novice/Expert Differences

Another key strand of research on composing shows that "experts" and "novices" solve the problems posed by the task of writing differently. The concept of the novice has been used to include (a) students at all levels whose skills are developing; (b) basic writers who are behind their peers or age group; and (c) very young writers. Each group, however, is distinctive, having differing characteristics and needs. And too, all writers, even the "experts," may continually develop, as they pose new problems to themselves and thus meet new challenges.

When college-age experts write essays, they write what Flower (1979) calls reader-based prose. Their less-skilled peers, on the other hand, often create what Flower calls writer-based prose. They are described as not consciously attending to, and Flower and Hayes (1977) conclude they do not think about, their reader while they are writing; instead, they are most concerned with the text. Thinking about the reader seems to help the experts plan their essays and generate ideas.

Findings from other expert-novice studies show that secondary, college-age, and adult experts who are given the same task as novices make global revisions, while novices revise mostly on the word level (Bridwell, 1980; Sommers, 1980). Sommers compared the changes adult student and expert writers made as they revised their written work. In analyzing interviews with the writers about their revision process, she found that expert writers revised on the discourse level and made changes in meaning, while student writers revised mostly on the word level and made changes in form. Bridwell came to similar conclusions on the basis of her comparisons of the revision process of more and less competent twelfth-graders.

Differences in what writers revise are related to how they detect and diagnose problems. Hayes, Flower, Schriver, Stratman, & Carey (1987), in describing the cognitive processes of revision, found that professionals detected more problems than did instructors, who in turn detected more than students. Similarly, professionals displayed a

larger repertory of revision strategies than instructors, who displayed more strategies than students for solving local and global problems. Students attempted to solve problems simply by rewriting, without analyzing them.

Witte's (1987) studies, however, suggest caution in drawing conclusions about the extensiveness and meaning of writers' revisions by only looking at the marks made on the page. His work has allowed insight into the words in adult writers' heads before the words appear on the page, what he calls "pre-text," and thus demonstrates that much revision may occur mentally, before anything is written on the page.

The ability to revise demands flexibility as a writer, a willingness to reconsider, to try again. Rose (1980) discovered that writers who suffer from writer's block may follow rigid rules and have inflexible plans. Students who have this type of writing difficulty are stymied because they apply rules rigidly to situations where the rules may not apply. Unblocked writers work with flexible plans rather than rigid rules.

Basic college-age writers may have difficulty following through on their plans; they may lose their train of thought because they spend so much of their energy during composing attending to mechanical concerns (Perl, 1979). Too, basic writers may have a different grammar of written language, an intermediate grammar between speech and writing (Bartholomae, 1980; de Beaugrande 1982; Shaughnessy, 1977); thus, they may be less able than more expert writers to attune to the flow of their text, that is, to detect errors by relying on their sense of the sounds of written text (Hull, 1987).

Relating What One Writes to How One Writes

Another line of research on composing examines how the nature of the writing task affects the writer's strategies. Researchers have demonstrated the effects of different modes of discourse or types of writing on parts of the composing process, be it the amount of attention to audience or engagement with the task itself (Applebee, with Langer, Durst, Butler-Nalin, Marshall, & Newell, 1984; Britton et al., 1975; Chafe, 1982; Durst, 1987; Emig, 1971; Hidi & Hildyard, 1984; Kroll, 1978; Langer, 1986; Marshall, 1987; Perron, 1974; Tannen, 1982). For example, as writers see their topics as more abstract, they spend more time planning. Writers tend to pause more when writing pieces that require generalizations than when writing reports; further, writers tend to pause more before abstract than concrete sentences (Matsuhashi, 1981).

Evidence is growing that given the same writing assignment, different college students will interpret it differently and thus will pose qualitatively different writing problems to themselves (Flower, 1987; Nelson & Hayes, 1988). Flower finds that students show only minimal awareness that they and others in their class may be solving very different writing problems. Nelson and Hayes show that college students expend significantly more effort and tackle more difficult tasks when their teachers monitor and support them throughout their writing processes, giving them guidance on references and asking them questions along the way. Too, college students stretch themselves more when they must present their work orally to the class as well as in written form to the teacher.

The Writing Process in the Classroom

We began this review of process research by pointing out that many teachers have begun using "the process approach," an approach to teaching writing that recognizes the many kinds of activities writers may engage in, including planning, drafting, revising, editing, and publishing. We noted too, though, that, in the country as a whole, the approach has seemed to have only minimal success in improving students' writing.

Indeed, there seems to be confusion over exactly what a process approach is. In his meta-analysis of the effects of different classroom approaches, Hillocks (1984, 1986) equates the process approach with "the natural process approach." As he describes it, teachers following this tack are concerned with having their students "go through a process" or essentially follow a set of procedures that include planning and revising, something more than just transcribing words onto paper. This approach, outlined in some detail in the *California Handbook for Planning an Effective Writing Program* (1986), may yield a set of unconnected "process" activities that fit well into the usual organizational structure of the school—and that do not require teacher decision-making to put into place.

Thus, many instructional leaders have expressed concern that the writing process may become a rigid set of activities in the school week: "Monday we plan; Tuesday we draft; Wednesday we respond to drafts; Thursday we revise," and so on (for an example of such concern, see introduction to Newkirk & Atwell, 1988). Viewing writing as a problem-solving process demands flexibility and room for a recycling through its various subprocesses. Students may not always need to revise, for example, or they may not benefit from response on the day response is scheduled (DiPardo & Freedman, 1988; Freedman, 1987a).

Moreover, little attention has been offered to the varied language situations of writers in our classrooms. For example, non-native speakers of English and bilinguals may use more than one language as they compose, with their oral and written language development intertwined in patterned ways, depending on their levels of proficiency in the language in which they are writing (see Valdés, 1988, for a review of research on the writing of non-native speakers and for specific suggestions for future research).

In summary, taken alone, knowledge about how adult writers compose provides an inadequate theoretical base for reforming instruction. Since the research on writing processes reveals something about how individuals write, its best use seems to be to help individual teachers better understand the writing processes of their individual students. This teacher knowledge, coupled with an understanding of how writing functions for and is used by writers, can lead to suggestions for reforming the teaching and learning of writing.

Needed as well, though, is an understanding of how writing develops, for the writing process varies, not only across contexts, but also over time. Children do not develop as writers by simply imitating "experts." Many educators have offered insight into the potential of child writers when not stymied by overemphasis on handwriting and spelling (e.g., Ashton-Warner, 1963; Britton, 1970; Burrows, 1959; Everts, 1970; Rosen & Rosen, 1973). Beginning most notably during the mid-1970s, formal studies of young writers began to yield visions of writing that looked very different from those of adults. In her research, Clay introduced five-year-olds who clearly did not plan in any adult-like way, hence the title of her book: *What Did I Write?* (1975). Graves (1973) described second-graders whose processes involved much talk to themselves and much drawing as well—neither critical variables in the adult writing literature. Development, then, takes its own course and must be examined as it unfolds, from the child's point of view, not from the adult's. For this reason, we now turn to a discussion of children's writing development.

THE DEVELOPMENT OF WRITING

When kindergartner Sharon finally decided to have a go at writing, she filled her paper with letters and letter-like shapes, hoping that indeed she had succeeded in "doing" writing, but not at all sure of what exactly she had done. Particularly in the past fifteen years, language-arts educators have gained new appreciation of both young children's

ability to "explore with a pencil," to use Marie Clay's words (1977), and of the complex changes that occur in students' writing over time.

As discussed earlier, children are initiated into the use of writing as a tool for communication—as a holistic process—during the preschool years. As a basic means of communication that is interwoven throughout their environment, writing is available for them to investigate, to play with, and to use in personally satisfying ways. And, as they do in learning other symbol systems (Werner, 1948), children experiment and approximate, gradually becoming aware of the specific features of written language and the relationships between meanings and symbols and between symbol makers and symbol receivers.

Written language learning, like oral language learning, is complex, for written language too is a "complex of interconnecting systems," including phonological (more accurately for writing, orthographic), syntactic, semantic, and discourse rule systems (Nelson & Nelson, 1978, p. 225). The complexity of the written language system is reflected in the diverse perspectives of the literature on writing development. Some researchers have focused on children's exploration of the visual features of print, for example, its directionality and arrangement on a page (e.g., Clay, 1975). Others have studied how children come to understand the orthographic encoding system (e.g., Ferreiro & Teberosky, 1982; Read, 1975) and the intricacies of graphic segmentation and punctuation (e.g., Cazden, Cordeiro, & Giacobbe, 1985; Edelsky, 1983), tracing the evolution from early forms, like a five-year-old's *ILVBS*, to the more conventional, like *I love* (ILV) *spaghetti* (pronounced "basghetti," hence BS). Still others have examined such text level features as the changing structural organization of children's stories or reports (e.g., Applebee, 1978; King & Rentel, 1981; Langer, 1986; Newkirk, 1987) or changes in children's control of the varied processes involved in forming such texts (e.g., Graves, 1975, 1983; Perl, 1979).

Within each area or strand of written language, general patterns in how children perform particular sorts of writing tasks can be identified. Often researchers and educators talk about what developmental stage of writing particular children are in, and, by "stage" they have in mind one aspect of written language use. For example, in the literature on young children's writing, "stage" is most often used in reference to spelling. But when we look at a child, like Sharon, with consideration for the whole of her development as a symbol-maker, commenting on what stage she is in is quite a different matter.

Although writing can be logically analyzed into its varied aspects, a learner comes as a whole, not displaying knowledge of these aspects in neat sequential order, but in clumps which the researcher and the teacher (not the learner) must separate into neatly organized categories. Further, written language, like oral, is an independent entity but is subject to the demands of the situation. Like a kaleidoscope, its parts are ever newly arranged, newly revealed. And, finally, the person controlling the kaleidoscope has his or her own intentions and style, his or her own sense of what's interesting; thus individuals who share similar knowledge about written language may have different stylistic preferences for organizing and using that knowledge for acting, thinking, and expressing meaning (Bussis, Chittenden, Amarel, & Klausner, 1985). In brief, the nature of the individual learner, the nature of the situational context, and the complex nature of the writing system itself all interact in written language growth, just as they do in oral language growth (Dyson, 1985a, 1987a).

The interplay of these factors suggests that we cannot offer a one-dimensional description of writing development that can serve as a template for all learners (Dyson, in press). However, as educators, we can ask varied kinds of broad questions that will inform our decisions about the challenges facing and the potential sources of support for

students. For example, we can ask, how does the young child as a symbolizer—one virtually blooming with symbolic capacity in the preschool and early school years—approach this relatively more difficult form of symbolization (Donaldson, 1984; Dyson, 1988a, 1989; Ferreiro & Teberosky, 1982; Gundlach, 1982)? How do other symbol systems, like those of drawing or of talk, support written language growth? How do they pose tensions, challenges to be resolved?

We can also ask, within a developing strand of the system, what sorts of patterns of change have been observed? How do those developmental patterns relate to broader patterns of cognitive, linguistic, and social development (e.g., Bartlett, 1981; Bereiter & Scardamalia, 1982; Edelsky, 1986; Graves, 1975)? And we can offer insight into the varied ways these developmental strands may be interwoven as individual learners grow and change: What dimensions of behavior (stylistic, situational, linguistic, cultural) influence the ways in which students orchestrate these varied dimensions of writing (Bussis et al., 1985; Dyson, 1987a; Edelsky, 1986)?

Finally, we can ask about the sorts of environments that give rise to these challenges. That is, in a Vygotskian sense, what sorts of collaborations with others initiate children into written language? In a Piagetian sense, how do productive tensions, between self and others, between meaning intended and meaning formed, get set into motion? And we can consider the work of the many teachers who have shared their insights into the workings and unfoldings of writing in their particular environments. These are the particular considerations that may yield insights into the kinds of environments that are helpful to developing composers and their teachers (Newkirk & Atwell, 1988).

In the following sections we consider these questions. Our review is selective, intended to capture a sense of development and of the kinds of environmental resources supporting development. Since other chapters in this volume discuss students' developing control of conventions, we emphasize here changes in their ways of composing text worlds.

The Nature of Writing Development

Children's early ways of writing. Although children are initiated into the use of written symbols during infancy, they control first-order symbols systems, like speech and drawing, before they control second-order systems like written language (systems in which one symbol stands for another, as the written graphics stand for the spoken word). Researchers have pointed out that children use drawing and talk to support their early exploration of and use of print (Dyson, 1982, 1988a; Graves, 1981; Gundlach, 1981).

Children themselves make clear this linking, as they declare their interest in "writing houses and stuff." They understand that writing, like drawing, is a way of representing experiences. Children may, in fact, initially view writing as similar to drawing in the way that meaning is encoded in both. That is, they may view writing as direct symbolism: children may not form letters to represent speech, but to represent known people, objects, or the names of those figures directly (Ferreiro & Teberosky, 1982). In their view, readers may then elaborate upon, talk about, the written names (Dyson, 1983).

For example, five-year-old Sance's piece (Figure 1) is similar to many products written spontaneously by young children. Following are Sance's comments on her graphics:

Figure 1. Sance's writing and drawing.

That's my Mama's name [Patty]. That's my phone number [1626]. That's my house. That's a whale. That's grass.
This is my name. HBO. That's my neighbor. That's my brother's name [Troy]. That's love. And that's my dog.

Sance graphically depicted figures with letters or with drawings, and then she talked about these important people and things. As her piece suggests, children's first conventionally written words are usually their own names, and, from those names, they reach out to learn more about written language. For example, five-year-old Mark comments, "That's me," pointing to the letter M; his peer Rachel remarks, "That goes in Brian's name," when she spots a B.

Children's early behavior reflects the complex and hierarchical nature of the symbol system, for they seem initially to explore all aspects of written language (Clay, 1975; Hiebert, 1981). In addition to finding personally meaningful connections with these new symbol systems, they often explore the medium itself, with no concern for a specific message; in their exploring, they play with print's basic graphic features, for example, its linearity and the arrangement of print lines upon the page (Clay, 1975). Children also repeat, for pragmatic or exploratory purposes, familiar sentence or phrase routines ("I love you"), and they may even write whole texts (stories); these extended texts may be written with children's least sophisticated encoding procedures (e.g., cursive [~~] writing) (Dyson, 1981; Sulzby, 1985). Their efforts to write for immediate audiences, as in letters and cards, may result in more conventional words than their writing for less specific audiences (as in book writing) (Lamme & Childers, 1983).

Once children gain some initial understanding of the unique nature of the symbol system, including its alphabetic nature—that precisely what is read depends on precisely what letters are written and that particular oral/written relationships define the precise letters—writing may become more difficult. Children may be less willing to put down well-known letters randomly, or simply to trust that a reader will find a message in their printed graphics (Clay, 1975). They must work hard to orchestrate the complex message creating and encoding process of writing. And in so doing, they lean on other people, other symbol systems, and their understanding of the sort of activity they are participating in (i.e., their knowledge of the kind of writing expected in any particular situation).

Patterns in discourse development. Children's early writing often consists of well-known words, simple statements, or repetitive sentence structures (Clay, 1975; Edelsky, 1986; McCaig, 1981; Sowers, 1981). The text is often just a reference point for an experience, which may well have been recorded more fully elsewhere, in talk or, less ephemerally, in drawing. Depending on the child's intentions, a label could be the written tip of an imaginary world (Dyson, 1983, 1988b) or the seedling of an essay on a topic of interest (Newkirk, 1987). Thus, to gain insight into children's efforts—and to help them reflect on what exactly they have done—teachers may have to listen to children's talk during the drawing and writing as well as "read" both their pictures and their text.

Children's early written texts, like their spelling (Henderson, 1981; Read, 1975) and syntax (Loban, 1976; O'Donnell, Griffin, & Norris, 1967), undergo transformations during the school years (Gundlach, 1981). They not only become longer, they also become more coherent and internally cohesive. For example, children become less likely to make references outside the texts themselves (e.g., to begin texts with "This is") or to use pronouns without references (e.g., to use "He is" when who "he" actually "is" is not clear). Still, even middle-school children have difficulties making clear these internal connections in particular situations, for example in disambiguating two "he's" when a text involves two same-sex characters (Bartlett, 1981).

In addition to changes in length and internal connectedness, the global structure of children's texts becomes more complex over time. Even preschoolers are aware of differences in text structures or genres. Through their experiences with the print world surrounding them, they come to realize that surface forms of letters, maps, and stories, for example, may all vary (Harste, Woodward, and Burke, 1984). Yet, as just discussed, children's initial authoring, their stories and reports in school, may consist of statements and labels.

A number of researchers have traced the increasing complexity and structural integrity of children's texts, particularly their written stories. By the time they begin formal schooling, young children generally display an understanding of many underlying features of narratives, that is, of their culture's way of storytelling (Applebee, 1978; Leondar, 1977; Stein & Glenn, 1979; Wolf, 1985). Children can often tell stories with recognizable characters engaged in simple plots, with beginnings, middles, and ends. They know the conventional "once-upon-a-time" beginning and, less often, the "happily-ever-after" ending, and they place intervening events in the past tense.

King and Rentel (1981, 1982) illustrate how, over the course of the first two years of schooling, children's written stories acquired the structural complexity evident from the very beginning of school in their orally-told stories. This progress in writing was less evident for non-middle-class than middle-class children in their study; the former children began with less knowledge of written language-like story structures, but, in addition, they had fewer opportunities in their school to hear, produce, and talk about stories.

Although basic narrative knowledge is evident quite early, it does continue to develop throughout the school years. For example, it is not until the middle school years that detailed information about characters' motivations and reactions is regularly included in students' stories. Similarly, elaborate accounts of how events unfolded are not consistently given until the middle and junior high years (Bartlett, 1981). Indeed, even fluent adolescent writers may be far from skilled in embedding the quality of an experience in textual description and narration of actors and their actions (Dixon & Stratta, 1986); secondary students, like elementary ones, may discover that, in visualizing and dramatizing their stories (in making use of other media), characters' unarticulated emotions emerge in facial expressions, gestures, movement and dialogue—all aspects of the living "text" that must somehow be translated into words.

There is less information available on the development of expository prose, but what is available suggests a more gradual development. Young children do use exposition (Bissex, 1980; Langer, 1986; Newkirk, 1984; Taylor, 1983), but much research has emphasized how middle and junior high students grapple with nonfictional forms (e.g., Bereiter, 1980; Scardamalia, 1981). Bereiter and Scardamalia suggest that students' difficulty with these forms has to do with their general cognitive development—that is, students have difficulty integrating the multiple ideas contained in exposition into an orderly whole. But students may simply have less exposure to models of expositions and, in the primary grades, fewer opportunities for practice (Langer, 1986; for a discussion of the development of expository materials for, and with the help of, young school children, see Comber & Badger, 1987).

From the work of Newkirk (1987) with primary-grade children and Langer (1986) with intermediate- and middle-school children comes a sense of how children's expository writing may be gradually transformed. Without claiming that there is a rigid developmental sequence, Newkirk presents a general progression of structural complexity in children's texts. Simple written labels for pictures may evolve into a series of labels or linked

information statements, attributes, or reasons. For example, an early label like *bird* or a simple listing of figure names (*bird, dog, house, flower*) may appear before two-unit clauses—"couplets"—which can link the "litany-like repetition," for example:

> This is my kneaf My knife is sharp [one couplet]
> This is a bowy knife Bowie knifs are sharp [another couplet]
> (Newkirk, 1987, p. 131, p. 133)

Still more complex are texts containing paragraphs in which the statements are in some kind of logical order, even though paragraphs themselves may not yet be ordered.

Like Newkirk's, Langer's (1986) findings also suggest that students gradually transform structures they already control. For example, as late as ninth grade, students did not regularly use such complex expository forms as problem/solution, causality, or comparison of alternatives to organize their texts globally. But, when she examined lower-level, more circumscribed structures, Langer found that indeed more complex expository structures did gradually appear across the school years.

As just illustrated, forms of discourse, like children's drawing schemata (Goodnow, 1977) and grammatical structures (Slobin, 1979), undergo gradual transformations. Rather than adopting wholly new structures, students seem to solve new text-forming problems by gradually adapting forms already controlled. This transformation process is conservative; text features are added on before internal restructuring occurs (Bartlett,1981).

Similarly, the very process of rethinking—revising—texts develops conservatively. With Sowers (1985) and Calkins (1980), Graves (1983) studied 16 elementary school children (grades 1 through 4) in a middle-class community school over a 2-year period. One of the researchers' major means for studying the children, which became a major means for teaching them as well, was the workshop conference in which researchers and teachers talked to individual children about their writing processes and products. The children's responses to these conferences illustrated the gradual development of an awareness of text malleability and of the means to act deliberately on that awareness.

For example, children seem willing to change spelling and handwriting earlier than they do structure and content. Indeed, they might find abandoning drafts easier than reworking them (Calkins, 1980). Too, as Graves (1983) notes, children may find little use for revision unless they are grappling with ordering ideas—a list of names or statements makes sense in any arrangement.

The research reviewed on discourse forms, and the insight it offers into students' ways of structuring texts, may help teachers respond in helpful ways to possibilities present in individuals' work. That is, by looking analytically at students' efforts, teachers may find new structures in their products, structures that can be talked about and built upon (e.g., "You know how you arranged the sentences in that paragraph? I wonder if the paragraphs themselves should be rearranged?")

As argued throughout this section, developmental changes in students' writing processes and products are linked, not only to changes in writing itself, but to changes in how students use writing vis a vis other symbol systems, particularly drawing and speech. To gain insight into the changing role of writing in children's symbol-making, Dyson (1988b, 1989) conducted a longitudinal study of eight primary (K-3) grade children in an urban magnet school, examining their drawing, talking, and writing (and, in the kindergarten, dictating) during a daily composing period.

As in others' studies, the observed children initially relied on drawing and talking to carry much of their story meaning. Moreover, the social functions of composing time were accomplished primarily through drawing and talking. Through those media, children not only represented imaginative worlds, they also connected with their friends, as peers talked about and at times playfully dramatized each others' texts. And they also commented on their experiences, as they evaluated the "realness" of each others' pictures. In time, children began to comment on each other's texts, as well as pictures; gradually they tried to accomplish, through writing, the social and evaluative functions previously accomplished primarily through other media. That is, over time, writing allowed the children to make connections with, and writing became more embedded in, their social and experienced worlds.

Yet, the children faced challenges in accomplishing through writing what they had earlier done through drawing and talking. The overlapping symbolic worlds of text, talk, and pictures, the ongoing social world, and the wider world of experiences all exist in different space/time structures; tensions among these structures were evident in the children's talk during writing and also in their texts (e.g., in shifts of tense and of person). That is, children's often awkward texts, with their unstable time frames and points of view, result not only from children's grappling with discourse forms—with textual worlds—but from their grappling with multiple worlds. For example, consider second-grader Jake's piece, written as he played inside—and outside—his text with his friend Manuel:

> Once there was a boy that is named Manuel. Manuel is going to fly the fastest jet and I am going to fly the the jet too. But Manuel's headquarters is going to blow up But I am OK. But I don't know about Manuel but I am going to find Manuel [and on the story goes as Jake finds Manuel, assures himself of his safety (Manuel are you OK? Yes I am OK.) and then saves him by shooting the bad guys "out of the universe."]

"Simple" narrations, then, are not so simple (cf. Perera, 1984), considering the different media and different "worlds" writers move among. Nonetheless, in time, straightforward chronologies may be manipulated into time expansions and condensations, foreshadowing and remembering (Graves, 1983; Dixon & Stratta, 1986), as students develop new ways of structuring experiences—and connecting with readers.

The developmental role of form. As the research just reviewed illustrates, a major developmental difficulty is that any discourse form serves multiple functions. To internalize the forms modeled for them in school, students must understand what those forms, in both their substantive and social functions, are meant to do—how functions and forms may place authors in particular stances toward the experienced world and toward anticipated readers (Bruner, 1986; Dyson, 1988b; for a recent review of the "social dimensions" of writing, see Rubin, 1988).

The concern that discourse forms be meaningful for children is related to Britton's (1970; Britton, Burgess, Martin, McLeod, & Rosen, 1975) caution against overemphasizing the forms of students' writing. In a study of the written products produced in school by secondary students, Britton and his colleagues (1975) found a predominance of "transactional" writing, writing to accomplish some practical aim in the world (e.g., giving information). They argued that students may become more comfortable and fluent as writers—and be better able to reflect on their experiences—when initially allowed to write "expressively," that is, in a relaxed, conversational way. To illustrate, Britton et al. (1975) present a number of student texts, including the following text by a young girl:

> It is quite easy to make oxygen if you have the right equipment necessary. You will need a test tube (a large one), a stand with some acid in it. You will need also a Bunston burner. Of course you must not forget a glass tank too. A thin test tube should fix neatly in its place. When you have done that fill the glass tank and put the curved end upwards. Put the glass tank on the table and fill with water. Very soon you will find that you have made oxygen and glad of it. (p. 196)

Moffett (1968; Moffett & Wagner, 1983) has also written persuasively about the importance of writing that is infused, like the above science report, with the writer herself. And indeed, many successful writing programs have followed this dictate; students begin by writing about familiar subjects for known others (for example, see earlier discussion on Heath's work with teachers).

The emphasis on conversational writing predated the more recent emphasis on young children's early writing, which is decidedly unlike speech. Students' interest in varied kinds of writing may well have been underestimated. Further, students' familiarity with particular written discourse forms, and thus with their "comfort" with those forms, no doubt varies.

Nonetheless, it is developmentally sensible that control of formal discourse forms will happen gradually and that many students will build from more comfortable conversational forms. Indeed, it is this concept that underlies "dialogue journal" programs, which have been used to help students from varied backgrounds learn to write (Staton et al., 1988; see also Fulwiler, 1987).

The challenge of orchestration. This section on the nature of writing growth illustrates just how very complex writing is, particularly for the inexperienced. For they must worry not only about how their ideas are taking shape but also about how to spell out those ideas, where their periods and commas go, and even how certain letters are formed. (A classroom teacher, Martha Rutherford, reported her second-grade daughter's worry that she had, once again, spelled "raddit" rather than "rabbit").

Thus, this section closes with a return to the concept of orchestration introduced earlier (Bussis et al., 1985). Students cannot control all aspects of the written system at once (Graves, 1982; Jacobs, 1985; Weaver, 1982). There are individual differences—stylistic differences—in how students get a handle on the process, that is, in which aspects of the process they do or do not attend to at any given writing moment. Moreover, to this orchestration, students bring varied resources—different understandings of the encoding system, of text structure, and of literacy's purposes—and they bring diverse ways of interacting with other people and with other symbolic media (Dyson, 1987a).

The task of supporting students—the task of teaching—is therefore also very complex. Teachers are supported in their own efforts by their understandings of the nature of writing and of the developmental challenges inherent in writing. And they are supported as well by their ability to observe in students' processes and products signs of what students are grappling with and by their understanding and ability to make use of the resources available to them in the classroom environment. The most important of those resources are the human ones—themselves and their students. It is to these resources that we now turn.

The Support System for Writing Development

Our understanding of the role of others in learning has been influenced by the theoretical ideas of Vygotsky and, more specifically, by research on children's acquisition of language. Vygotsky (1978) argued that learning is a social process; children are initiated into the use of their culture's signs and tools, such as written language, by their interactions with other people: "From the very first days of the child's development, his activities acquire a meaning of their own in a system of social behavior and, being directed towards a definite purpose, are refracted through the prism of the child's environment" (p. 30). Children, then, grow and learn as they join in ongoing social activities, engaging in problem-solving with others. Gradually, they begin to internalize the processes they initially performed collaboratively. Just as a symphony gives meaning to the individual notes it contains, the social system in which children participate shapes the cognitive development of individuals (Rogoff & Lave, 1984). Schools, therefore, can promote development best if they are very social places, places where students have ample opportunities to interact with one another and with their teachers. Schools can maintain order and organization, but they cannot remain halls of silence.

The role of interaction in development. Vygotsky suggests that social interaction leads the child's development forward. Learning does not wait upon but in fact leads development, as the instructor aims for the learner's "zone of proximal development . . . the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with peers" (1978, p. 86).

Researchers have focused on understanding more precisely how thinking is influenced by social interaction in a variety of home, work, and school settings (see literature review by Rogoff, Ellis, & Gardner, 1984). In daily life, teachers do not simply direct the learner's performance but, rather, collaborate with the learner; teachers model both the problem-solving process and involve the learner in that process.

The following classroom example illustrates a collaborative social interaction about a piece of writing between Art Peterson (AP) and his ninth-grade student, Gina. The two are discussing a draft of a paper she has written about her friend Dianne. After reading Gina's draft, Peterson models how Gina might go back and forth between generalization and support for her generalizations:

AP: All right. . . . What . . . is Dianne's main quality as you see it?

Gina: Uhm, well, she is pretty phony.

AP: Phony.

Gina: . . . That's the main word. Phony. Uhm . . . she has a lot of money and she uses it to get people to like her. She thinks that . . . her money is the only thing that's . . . in her that's worth anything. So in a lot of ways she's very uhm—

AP: Insecure.

Gina: Insecure. Well she's also secure in that . . . she tries to act as if she is secure. You can really see through that after you get to know her. . . . She uses her friends as a sort of shield. If she wants to do something, and because of her insecurity she feels bad about it, she tells her friend, "Go do

this for me." For example, if she wants to uh ask somebody to do something for her . . . Her friend said she wanted me to go to the movies with her. She was insecure about me saying "yes" or "no," whether or not I liked her. So she asked her friend to ask me.

AP: Okay. Okay. So you've got this insecure person, but she has certain uh uhm . . .

Gina: But she tells people in a lot of ways. A lot of people think that she is the most secure person that they've ever seen.

AP: Yeah. Because she has these little uh tricks or devices, one of which is money.

Gina: Yeah. Uh hum.

AP: Another, another, another . . .

Gina: She has lots of clothes, her tennis ability, her skiing ability. That stuff.

AP: Okay, and then she has all these other little manipulative techniques.

Gina: Yeah. She uses her friends.

AP: Yeah right.

Gina: Yeah.

AP: Okay. So that's good. You've got a person who is basically insecure, but is able to cover it up. Of course you've got to establish her insecurity. You can't just say she's insecure.

Gina: Uh hum.

AP: I mean you've got to (unclear) give me some examples of how this shows through sometimes. Uh hum. But then, you get in to the way you, these little techniques that she uses. That could be good.

Peterson's questions allow Gina to articulate her essential understanding of Dianne. Through this collaborative problem-solving with her teacher, Gina comes to new understandings of Dianne's insecurity, as she sorts out the appearance from the reality. Gina moves from describing Dianne as phony, to insecure, to apparently secure. Peterson does not impose his ideas; after all, he has never met Dianne. Instead, playing the roles of an interested listener and reader, as well as teacher, he draws an inference from what Gina has said about Dianne, gives Gina opportunity to elaborate on the reasons others perceive Dianne as secure, coaches Gina in synthesizing her thoughts by taking one of her judgments (Dianne appears secure although she is really insecure), models the process of supporting a generalization by adding a piece of support from what Gina has already said (Dianne's use of money), and then asks Gina to independently add further elaboration and thereby show that she understands the process he has just modelled. Finally, he summarizes what he and Gina have constructed, what will become the essence of Gina's paper: "You've got a person who is basically insecure, but is able to cover it up." Peterson has led Gina to verbalize more than the surface phoniness, to understand its source and its effects. Gina has used oral language in the form of a student-teacher

conversation to bring her thoughts together (example and discussion excerpted from Freedman, 1987a).

As Peterson illustrates, teachers need to be sensitive to their students' current skills and understandings and provide collaborative support to help them move along (Cole & Griffin, 1980; Wertsch, McNamee, McLane, & Budwig, 1980).

> In instruction using the zone of proximal development, the adult oversees the construction of an instructional context by establishing references to what the child already knows. This context allows the child to build new information or skills into the existing knowledge structure. (Rogoff & Gardner, 1984, p. 100)

Clearly, successful instruction is dependent on the adults' "headfitting," Brown's (1979) term: the closer the distance between what the learner already knows and the information to be acquired, the more likely it is that instruction will be successful.

In this conception of teaching and learning, there is a sense of Stern's (1977) description of adult-infant communication as a dance, in which mother and child accommodate to each other. In fact, it is the child-language literature that provides perhaps the clearest illustrations of the learning of information and skills through interaction (e.g., Cross, 1975; Snow & Ferguson, 1977; Wells, 1981). Researchers have examined the nature of caregiver/child interaction, as well as the nature of the learning that results. Particularly relevant here are the mother/infant studies by Bruner and his colleagues (Bruner, 1978; Ninio & Bruner, 1978; Ratner & Bruner, 1978). They have characterized the adult role as one of providing "scaffolding" that supports early language learning. Adult/child interaction is built around familiar and routinized situations, such as peekaboo games and storytime rituals, that serve both as immediate ends in themselves and as the contexts within which the child gradually learns more sophisticated language functions: mothers "would introduce a new procedure and gradually 'hand it over' to the child as his skills for executing it developed" (Bruner, 1983, p. 60). Studies of early language learning in non-mainstream homes and communities indicate that scaffolding dialogues may take different forms in different cultures (Heath, 1983; Schieffelin, 1979).

Bereiter and Scardamalia (1982) also describe the support teachers give writers, referring to it as "procedural facilitation." This teaching practice, which aims at developing students' composing strategies, focuses on learners' cognitive activities, not on the actual content of their texts. The teacher, or mechanical support system (word processor, cuing cards), enables students to carry out more complex strategies during such tasks as content generation and revising than the student could carry out alone.

Instructional procedures. This conception of the interactive nature of instruction is beginning to be used as a framework for examining instruction. In 1979, Cazden summarized recent research on discourse learning and proposed Bruner's studies of "peekaboo" as a starting point for a new instructional model, and many such efforts have begun (e.g., Applebee & Langer, 1983; Langer & Applebee, 1984; Brown, Palincsar, & Purcell, 1986; Palincsar & Brown, 1984).

These efforts to apply the concept of scaffolding to teaching and learning in schools are appealing. However, as Cazden (1988) cautions, the scaffolding metaphor is static while the process of teaching and learning is dynamic; the participation of the learner affects the teacher just as the teacher affects the learner, as both move to build a support structure that meets the learners' needs. Freedman (1987a) uses the term collaborative problem-solving in an attempt to capture the dynamic role of interaction in the process of teaching and learning.

In assisting developing writers, teachers can provide a variety of kinds of social interaction around writing—both between themselves and their students as in the Peterson example (see also Graves, 1983; Murray, 1984; Sperling, 1988; Witte, Meyer, Miller, & Faigley, 1981) and among the students themselves. Student interaction can take many forms. In classrooms, writers may talk to one another about their writing informally as they work side-by-side on their individual papers (Dyson, 1987b, 1988a) or as they collaborate on a joint piece (Daiute, 1989; Daiute & Dalton, 1988). As Daiute and Dalton (1988) argue, the informal and playful talk of elementary school children sounds quite different from more formal teacher-student conferences. But its playfulness—its childlikeness—is in fact its value, for language play involves modeling, exploring, and negotiating the sounds and meanings of language.

Students, particularly secondary-school students, may also interact in highly structured peer response groups (Beaven, 1977; Berkenkotter, 1984; Freedman, 1984, 1987a; Gere & Abbott, 1985; Gere & Stevens, 1985; Healy, 1980; Macrorie, 1970, 1984; Moffett, 1968; Newkirk, 1984); in special peer tutoring programs (Bruffee, 1973, 1978, 1984, 1985; Hawkins, 1976); in classrooms organized specifically to allow for peer writing groups (Elbow, 1973; Murray, 1984; Nystrand, 1986); and even in writing groups that are based in communities rather than schools (Gere, 1987; Heller, 1990). (For reviews of peer talk about writing, see DiPardo & Freedman, 1988, and Gere, 1987; for questions about the efficacy of peer groups, see Newkirk, 1984, and Berkenkotter, 1984.)

In the end, for teachers or peers to provide meaningful support to developing writers, they must work in environments that are flexible, where they can be attentive to the highly varied needs of individual writers. Indeed, writers and teachers of writing will need to become "members of a diversified community of learners—dynamically interacting and, like the business of becoming a writer, forever in process" (DiPardo & Freedman, p. 145).

CONCLUSION

Sharon's task is complex, but she has many years, indeed a lifetime, in which to build a repertoire of skills that will enable her to create the music of her written language portfolio. She will need the help and encouragement of many people along her way—members of her community and of her family, teachers, friends, and classmates.

As she grows up, Sharon's developmental path may take different directions from the paths of some of her five-year-old friends. The challenge for the schools is to understand Sharon's needs and the needs of Sharon's friends and to provide the support they all will need throughout their years in the classroom. Through supportive and responsive classroom environments, schools may best help each generation grow into literacy in ways that enable them to use written language productively and fulfillingly throughout their lives.

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